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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,952	07/25/2003	David R. Arnold	1096	3212

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PATENT DEPARTMENT
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EXAMINER

ENGLISH, PETER C

ART UNIT	PAPER NUMBER
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3616

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,952

Applicant(s)

ARNOLD, DAVID R.

Examiner

Peter C. English

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

1. The preliminary amendment filed 06 June 2005 has been entered.

Election/Restrictions

2. The previous restriction requirement is hereby withdrawn because applicant has amended claim 16 to depend from claim 1. All pending claims are therefore treated on the merits in this Office action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

62, shown in Fig. 4.

A_n, shown in Fig. 5.

4. The drawings are objected to because:

The circles labeled by reference number 32 should be illustrated by dashed lines since these circles represent an imaginary boundary.

In Fig. 4, reference numbers 26, 44, 200 and 202 should be deleted. Note that reference number 26 labels a wire in Fig. 2, reference number 44 labels an anchoring ferrule in Fig. 3, and reference numbers 200 and 202 correspond to elements of the invention (not the prior art).

In Fig. 5, reference number 200a should be deleted. Note that reference number 200a labels the preformed cable in Fig. 9B.

In Fig. 6, the left-hand occurrence of "24" should be "27".

In Fig. 6, reference number 27a should be deleted since the inter-wire spaces are not illustrated in Fig. 6.

In Fig. 7, both occurrences of "Cn" should be "CN". See Figs. 8A and 8B, and paragraph 36.

Fig. 9A inaccurately illustrates the fixture 300 and the cable 20. The fixture should be bounded by solid lines. It does not appear that any cable is shown.

Fig. 9C should include reference numbers 20a, 20b and 20c. See paragraphs 49-50.

In Fig. 10, both occurrences of "304" should be "204". See Fig. 6 and paragraph 51.

In Fig. 11A, reference number 200 should be deleted.

In Fig. 13, "44" should be "44a". Note that the ferrule of Fig. 3 is a different structure from the anchor of Fig. 13.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The new title should indicate that the cable is used in a seat belt system.

7. The abstract of the disclosure is objected to because of the inclusion of legal phraseology, such as "means" (line 5), which should be avoided. Correction is required. See MPEP § 608.01(b).

8. The specification is objected to because:

In paragraph 2, at line 11, “six” should be “five”. See Fig. 2.

In paragraph 8, at lines 12-13, “bracket section is fastened to the generant housing 74. A” should be deleted.

In paragraph 9, at line 15, “strands” should be “guards”.

In paragraph 11, at line 3, “45” should be “40”.

On page 7, a brief description of Fig. 9C should be provided.

In paragraph 25, at line 2, “portion of a belt tightener” should be “rear seat assembly”.

In paragraph 31, at line 3, “202 or” should be “202 to”.

In paragraph 33, at line 3, “27” should be “27a”, and “27a” should be “27”.

In paragraph 35, at line 3, “27” should be “27, 27a”.

In paragraph 37, at line 5, “202n” should be “202-202n”.

In paragraph 40, at line 7, “40” should be “40, 44”, and “202” should be “204”.

In paragraph 46, at line 12, “70a” should be “70”.

In paragraph 50, at lines 3-4, “303b and 303c” should be “304 and 306”.

In paragraph 55, at lines 3, 9 and 19, “44” should be “44a”. Note that the ferrule of Fig. 3 is a different structure from the anchor of Fig. 13.

In paragraph 55, at lines 12, 13, 18, 22 and 23, “webbing” should be inserted after each occurrence of “belt”.

Appropriate correction is required.

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The specification fails to describe a “multi-cable” (claim 8).

The specification fails to describe a solder, resin or epoxy “which is pliable within a temperature range of -40 degrees F and 120 degrees F” (claim 12).

The specification fails to describe a wire cable comprising “threads” (claim 24, line 7).

Claim Objections

10. Claims 1-10 and 16-25 are objected to because:
- In claim 1, at lines 3 and 4, “end” should be “ends”.
- In claim 24, at line 3, the second occurrence of “end” should be “ends”.
- In claim 24, at line 4, “end” should be “ends”.
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, at lines 4-5, the alternative language “comprising at least a single strand or formed of a plurality of adjacent strands” is unduly broad and renders the scope of the claim unclear. If applicant wishes a broad recitation, then the claim should recite “at least one strand”; for a narrower construction the claim should recite “a plurality of strands”.

In claim 1, “the wire” (line 5) and “the wires” (line 6) lack proper antecedent basis.

In claim 1, at line 7, “easily melted” is indefinite because “easily” cannot be defined with a reasonable degree of clarity. What one person considers “easily melted” may differ greatly from another’s definition of the term.

In claim 3, at line 2, “determinable thickness” is indefinite because it is unclear what is added by the word “determinable”. What type of thickness is “determinable”, and what type would not qualify as “determinable”?

In claim 4, at lines 1-2, “the thickness of the fill material is variable” renders the claim indefinite because it inaccurately suggests that, once the cable assembly is constructed, the thickness can be changed by the user. The disclosure describes the use of different thicknesses, but not a “variable” (i.e., adjustable) thickness.

In claim 6, at lines 1-2, “one of an alloy of” is confusing and not understood. The examiner suggests: at line 1, delete “one of”.

In claim 6, at line 2, “an alloy of...” is indefinite because the list of materials that follows this phrase does not contain any alloys (i.e., mixtures of two or more metals). Instead, only

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elemental compounds are listed. The examiner suggests: at line 2, change “alloy of” to “alloy comprising”.

In claim 6, at lines 2-3, “selenium, resins or epoxies” is indefinite because these materials are not metals and therefore do not belong in a listing of alloys. “Resins” and “epoxies” certainly belong to a different class of compounds than alloys.

In claim 8, at lines 1-2, “multi-strand, multi-cable” is indefinite because it is unclear what structure is defined by this term. While “multi-strand” is understood, it is unclear what “multi-cable” means.

In claim 11, “determinable flexibility” (line 3) and “determinable stiffness” (line 5) are indefinite because it is unclear what is added by the word “determinable”. What type of flexibility/stiffness is “determinable”, and what type would not qualify as “determinable”?

In claim 11, at line 5, “the determinable stiffness” lacks proper antecedent basis.

In claim 13, at line 6, “determinable flexibility” is indefinite because it is unclear what is added by the word “determinable”. What type of flexibility is “determinable”, and what type would not qualify as “determinable”?

Claim 13 is indefinite because it recites separate “energy dissipating means” (line 7) and “energy absorbing material” (line 8). The specification does not describe such separate structures, but instead describes only one energy dissipating/absorbing material (i.e., the coating).

In claim 13, at line 9, “the bending” lacks proper antecedent basis.

In claim 14, at line 3, “determinable stiffness” is indefinite because it is unclear what is added by the word “determinable”. What type of stiffness is “determinable”, and what type would not qualify as “determinable”?

In claim 14, at line 3, “the determinable stiffness” lacks proper antecedent basis.

In claim 16, at line 1, “A method of making the flexible cable of Claim 1” renders the claim indefinite because claim 1 recites more than just a “flexible cable”. Note that claim 1 recites a “seat belt system” (see line 1). The preamble of claim 16 suggests that certain portions of claim 1 are somehow being excluded (i.e., all portions of the seat belt system except the flexible cable). This is improper since dependent claims, by definition, include all of the limitation of the claims from which they depend.

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In claim 16, at lines 1-2, “making the flexible cable of Claim 1 selectively more stiff” is indefinite because it inaccurately suggests that the cable produced by the method of claim 16 is stiffer than the cable of claim 1.

In claim 16, at line 5, “determinable stiffness” is indefinite because it is unclear what is added by the word “determinable”. What type of stiffness is “determinable”, and what type would not qualify as “determinable”?

Claim 16 states that the cable is impregnated with a “liquid material” (line 7). It is unclear what the relationship is between the “liquid material” of claim 16 and the “fill material” of claim 1 (see line 7).

In claim 18, at line 2, “is one, or an alloy of” is confusing and not understood. The examiner suggests: at line 1, delete “one, or”.

In claim 18, at line 2, “an alloy of...” is indefinite because the list of materials that follows this phrase does not contain any alloys (i.e., mixtures of two or more metals). Instead, only elemental compounds are listed. The examiner suggests: at line 2, change “alloy of” to “alloy comprising”.

In claim 18, at lines 2-3, “selenium resins or epoxies” is indefinite because these materials are not metals and therefore do not belong in a listing of alloys. “Resins” and “epoxies” certainly belong to a different class of compounds than alloys. Further, “selenium resins or epoxies” does not define a class of resins and epoxies since resins and epoxies are distinct from “selenium”.

In claim 20, at line 2, “the liquid” lacks proper antecedent basis. Note that claim 16 recites a “liquid material”.

In claim 22, at line 1, “the step of pre-treating” lacks proper antecedent basis. Note that this term is introduced in claim 21.

In claim 24, at line 6, “these individual wires or threads” lacks proper antecedent basis.

In claim 24, at line 6, “any...spaces” is indefinite because the addition of the word “any” suggests that this limitation is only hypothetical, i.e., not necessarily part of the claimed invention. Note that “any” also appears in claim 25.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-6, 16-18 and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Wier '140 (US 5,897,140). Wier '140 discloses a seat belt system comprising a cable 16 extending between a pretensioner 12 and a buckle 18. The cable 16 is "saturated" (i.e., impregnated) with a plastic coating material 46 (see column 4, lines 4-13) which inherently increases the stiffness of the cable to a certain degree. The curable coating material 46 is considered to be a "solder" as broadly claimed. With respect to claim 24, the pretensioner 12, which is secured to a vehicle structure, is considered to be an "anchor" as broadly claimed.

14. Claims 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wier '615 (US 6,095,615). Wier '615 discloses a seat belt system comprising a cable 11 extending between a pretensioner 3 and a buckle 13. The cable 11 extends around a curved guide 27. A tubular metal body 9 increases the stiffness of the cable 11 and deforms as it passes into the curved guide 27 (see column 3, lines 13-52).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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16. Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wier '140 (US 5,897,140) in view of Wier '615 (US 6,095,615) and Sachs et al. (US 2005/0017567). Wier '140 lacks a curved cable guide around which the cable extends, with the coating material increasing the stiffness of the cable and deforming as it passes into the cable guide. Wier '615 teaches a seat belt system comprising a cable 11 extending between a pretensioner 3 and a buckle 13. The cable 11 extends around a curved guide 27. A tubular metal body 9 increases the stiffness of the cable 11 and deforms as it passes into the curved guide 27 (see column 3, lines 13-52). Sachs et al. teaches a seat belt strap 12 whose stiffness is increased by impregnating the strap with a rubber or plastic material (see paragraph 48). In another embodiment the strap 12 is replaced by a cable 52 (see paragraphs 52-53). From these teachings of Wier '615 and Sachs et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wier '140 by providing a curved cable guide around which the cable extends, with the coating material increasing the stiffness of the cable and deforming as it passes into the cable guide, because this enables the buckle to be properly positioned relative to an occupant and also allows for energy absorption during operation of the pretensioner.

17. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wier '140 (US 5,897,140). Wier '140 lacks the coating steps recited in claims 19-22. The examiner takes Official notice that these coating steps are well-known in the art of coating. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wier '140 by coating the cable using the steps recited in claims 19-22 in order to achieve a uniform coating with a solid bond between the cable and coating.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sheren, Volk et al., Wier '913 and Evans teach seat belt systems with coated cables. Hancock teaches a copper-coated rod for absorbing energy. Landry teaches a cable with an impregnated coating.

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19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter C. English whose telephone number is 571-272-6671. The examiner can normally be reached on Monday through Thursday (7:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul N. Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peter C. English
Primary Examiner
Art Unit 3616

pe
13 June 2005